REMARKS

Applicants have studied the Office Action dated June 8, 2007. Claims 1, 21, 37 and 38 have been amended. Claim 39 has been cancelled. Claims 1-38 and 40-42 are pending. Reconsideration and allowance of the pending claims in view of the above amendments and the following remarks are respectfully requested.

In the Office Action, the Examiner:

(2-3) rejected claims 1-2, 4, 6-7, 15, 17, 20-22, 24, 26-27, 37-38, 40 and 42 under 35 U.S.C. § 102(e) as being anticipated by Lui et al. (US, 6,788,815);

(4-5) rejected claims 3, 8-10, 23, and 39 under 35 U.S.C. § 103(a) as being unpatentable over Lui et al. (US, 6,788,815) in view of Zhai et al. ("Performance Optimization of Virtual Keyboards");

(6) rejected claims 5, 16, 19, 25, 28, and 41 under 35 U.S.C. § 103(a) as being unpatentable over Lui et al. (US, 6,788,815) in view of Carman, II (US 5,454,046);

(7) rejected claims 11-14, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Lui et al. (US, 6,788,815) in view of Zhai et al. ("Shorthand Writing Stylus Keyboard"); and

(8) rejected claims 29-36 under 35 U.S.C. § 103(a) as being unpatentable over Lui et al. (US, 6,788,815) in view of Milewski et al. ("Medical Word Recognition Using a Computational Semantic Lexicon").

(2-3) Rejection under 35 U.S.C. §102(e) Lui

As noted above, the Examiner rejected claims rejected claims 1-2, 4, 6-7, 15, 17, 20-22, 24, 26-27, 37-38, 40 and 42 under 35 U.S.C. § 102(e) as being anticipated by Lui et al. (US, 6,788,815). Independent claims 1, 21 and 37 have been amended to distinguish over Lui. Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful. The present invention is directed to word

pattern recognition of gestures entered on touch-screen devices such as mobile phone, handhelds, and tablet computers and other devices with keyboards. The system supports very large vocabularies for each specific user. This technology has been licensed by IBM to a new Silicon Valley company, Shape Writer Inc.. A demonstration of this technology is available at online URL (http://www.shapewriter.com/demo.html). As shown in FIGs. 2 through 8, the system recognizes words through defined word patterns of known paths. Each of the paths connect elements of the word on the keyboard. The system captures strokes on a virtual keyboard. Next the system recognizes a word pattern by selectively processing different aspect of the stroke using a combination of channels (shape, location, tunnel) in relation to paths on the keyboard. Examples are clearly shown in FIGS. 7A through 7I.

Amended independent claims 1 (method with multiple processing channels), 21 (system with multiple processing channels, and 37 (method with at least one location processing channel) recite, *inter alia*:

1. (Currently Amended) A method of <u>recognizing</u> word<u>s</u>, comprising:

<u>defining word patterns of a plurality of known words by a plurality of paths, wherein each path connects elements in a word on a virtual keyboard;</u>

<u>accepting a stroke as an input on the virtual keyboard layout;</u> and

recognizing <u>a word pattern</u> by processing the <u>stroke</u> using a combination of a plurality of channels that selectively process different aspects of the <u>stroke in relation to the plurality of the paths on the virtual keyboard.</u>

21. (Currently Amended) A shorthand symbol system for <u>recognizing</u> word<u>s</u>, comprising:

a graphical keyboard layer for <u>accepting a stroke as an input trace;</u>

<u>a storage for storing word patterns of a plurality of paths, wherein each path connects a set of letters received from the graphical keyboard layer;</u> and

a pattern recognition engine that recognizes <u>a word pattern</u> by processing the <u>stroke</u> using a combination of a plurality of channels that selectively process

different aspects of the <u>input trace in relation to the plurality of the paths on the graphical keyboard layer</u>.

37. (Currently Amended) A method of <u>recognizing</u> word<u>s</u>, the method comprising:

<u>defining word patterns of a plurality of known words by a plurality of paths, wherein each path connects elements in a word on a virtual keyboard;</u>

<u>accepting a stroke as an input on the virtual keyboard layout</u>; and

recognizing a word <u>pattern by processing the stroke</u> using a <u>at least one location channel</u> that selectively process different aspects of the <u>stroke</u> in relation to <u>the plurality of the paths on the virtual keyboard</u>.

Support for this amendment is found in the application as originally filed, FIGs. 1 – 8 and paragraphs [0017] through [0103]. No new matter has been added.

The Examiner at page 2 of the office action correctly states (Emphasis Added) "*Lui discloses a system a method for accepting disparate type of computer user input [...] comprising a text input panel accepting soft keyboard [...] and text recognizer/synchronizing and <u>preserving an order with the user inputs test via the speech recognizer, the handwriting recognition, and soft keyboard</u>.*" However, careful reading of Lui discloses an apparatus that uses free form handwriting recognition or simple text entry on a keyboard i.e. FIG. 5 and FIG. 8. In the words of Lui at Col. 5, lines 27-33 (Emphasis Added) "*In accordance with various inventive principles, a Tablet PC user interface accepts a <u>spectrum of input ranging from entering characters via a simple virtual keyboard through single stroke or single character recognition. Single stroke refers to using one stroke to symbolize a character</u>.*" The spectrum continues from single character through cursive handwriting recognition to speech recognition. Lui is teaching single character recognition either from typing, a single character recognition or speech recognition. Lui is completely silent on the use of virtual keyboard, where "<u>word patterns of a plurality of known words by a plurality of paths, wherein each path connects elements in a word on a virtual keyboard</u>." The use of paths on the keyboard

is important, because in the present invention, recognizes "a word pattern by processing the stroke using a combination of a plurality of channels that selectively process different aspects of the stroke in relation to the plurality of the paths on the virtual keyboard." This is clearly shown in the present invention as examples are clearly shown in FIGS. 7A through 7I. Lui is completely silent recognizing words by processing "the stroke in relation to a stroke in relation to the plurality of the paths on the virtual keyboard."

The Examiner cites 35 U.S.C. § 102(e) and a proper rejection requires that a single reference teach (i.e., identically describe) each and every element of the rejected claims as being anticipated by Lui.[1] Because the elements in independent claims 1, and 21 of "recognizing a word pattern by processing the stroke using a combination of a plurality of channels that selectively process different aspects of the stroke in relation to the plurality of the paths on the virtual keyboard " and independent claim 37 of "recognizing a word pattern by processing the stroke using a at least one location channel that selectively process different aspects of the stroke in relation to the plurality of the paths on the virtual keyboard" is not taught or disclosed by Lui. The apparatus of Lui does not analyze a gesture or by a user on a virtual keyboard to recognize defined: "word patterns of a plurality of known words by a plurality of paths, wherein each path connects elements in a word on a virtual keyboard. Accordingly, the present invention distinguishes over Lui for at least this reason. The Applicants respectfully submitted that the Examiner's rejection under 35 U.S.C. § 102(e) has been overcome.

Independent claims 1, 21, and 37 have been amended to distinguish over Lui. Claims 2, 4, 6-7, 15, 17 and 20, 22, 24, 26-27, and 38, 40 and 42 depend from independent claims 1, 21, and 37 respectively. Since dependent claims contain all the limitations of

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[1] See MPEP §2131 (Emphasis Added) "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim."

the independent claims, claims 2, 4, 6-7, 15, 17 and 20, 22, 24, 26-27, and 38, 40 and 42 distinguish over Lui, as well.

(4-5) Rejection under 35 U.S.C. §103(a) Lui in view of Zhai

As noted above, the Examiner rejected claims 3, 8-10, 23, and 39 under 35 U.S.C. § 103(a) as being unpatentable over Lui et al. (US, 6,788,815) in view of Zhai et al. ("Performance Optimization of Virtual Keyboards"). Claim 39 has been cancelled without prejudice or disclaimer rendering the Examiner's rejection of claim 39 moot. Moreover, it is important to point out the author of the paper Shumin Zhai is a co-inventor on the present application and that both the present invention and the inventive concepts in the paper were at the time of the each respective invention and still currently under a commonly owned by the assignee International Business Machines.

Independent claims 1, 21, and 37 as described above in the section entitled "(2-3) Rejection under 35 U.S.C. §102(e) Lui" have been amended to distinguish over Lui.

Further Lui reference taken alone and/or in view of Zhai simply does not suggest, teach or disclose the patentably distinct limitation of the elements in independent claims 1, and 21 of "recognizing a word pattern by processing the stroke using a combination of a plurality of channels that selectively process different aspects of the stroke in relation to the plurality of the paths on the virtual keyboard" and independent claim 37 of "recognizing a word pattern by processing the stroke using a at least one location channel that selectively process different aspects of the stroke in relation to the plurality of the paths on the virtual keyboard."

Moreover, the Federal Circuit has consistently held that when a §103 rejection is based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in the reference, such a proposed modification is not proper and the *prima facie* case of obviousness can not be properly made. See In re Gordon, 733 F.2d

900, 221 USPQ 1125 (Fed. Cir. 1984). Here the intent, purpose and function of Lui taken alone an/or in view of Zhai is the use of individual character recongition, in contrast the intent and purpose of the present invention is "recognizing a word pattern by processing the stroke using a combination of a plurality of channels that selectively process different aspects of the stroke in relation to the plurality of the paths on the virtual keyboard." Not only does the present invention eliminate the need for typing, the system recognizes a word pattern by selectively processing different aspect of the stroke using a combination of channels (shape, location, tunnel) in relation to paths on the keyboard. This combination, as suggested by the Examiner, destroys the intent and purpose of Lui taken alone and/or in view of Zhai keyboard entry and character recognizion. Accordingly, the present invention is distinguishable over Lui taken alone and/or in view of Zhai for this reason as well.

For the foregoing reasons, independent claims 1, 21 and 37 as amended distinguish over Lui taken alone and/or in view of Zhai. Claims 3, 8-10, and 23 depend from claims 1, 21, and 37 respectively, since dependent claims contain all the limitations of the independent claims, claims 3, 8-10, and 23 distinguish over Lui taken alone and/or in view of Zhai, as well, and the Examiner's rejection should be withdrawn.

(6) Rejection under 35 U.S.C. §103(a) Lui in view of Carman II

As noted above, the Examiner rejected claims 5, 16, 19, 25, 28, and 41 under 35 U.S.C. § 103(a) as being unpatentable over Lui et al. (US, 6,788,815) in view of Carman, II (US 5,454,046). Independent claims 1, 21, and 37 as described above in the section entitled "(2-3) Rejection under 35 U.S.C. §102(e) Lui" have been amended to distinguish over Lui.

Further Lui reference taken alone and/or in view of Carman II simply does not suggest, teach or disclose the patentably distinct limitation of the elements in independent claims 1, and 21 of "recognizing a word pattern by processing the stroke using a combination

of a plurality of channels that selectively process different aspects of the stroke in relation to the plurality of the paths on the virtual keyboard" and independent claim 37 of "recognizing a word pattern by processing the stroke using a at least one location channel that selectively process different aspects of the stroke in relation to the plurality of the paths on the virtual keyboard."

For the foregoing reasons, independent claims 1, 21 and 37 as amended distinguish over Lui taken alone and/or in view of Carman II. Claims 5, 16, 19, and 25, 28, and 41 depend from claims 1, 21, and 37 respectively, since dependent claims contain all the limitations of the independent claims, claims 5, 16, 19, and 25, 28, and 41 distinguish over Lui taken alone and/or in view of Carman II, as well, and the Examiner's rejection should be withdrawn.

(7) Rejection under 35 U.S.C. §103(a) Lui in view of Zhai

As noted above, the Examiner rejected claims 11-14, and 18 under 35 U.S.C. § 103(a) as being unpatentable over Lui et al. (US, 6,788,815) in view of Zhai et al. ("Shorthand Writing Stylus Keyboard"). As an initial matter it is important to point out the author of the paper Shumin Zhai is a co-inventor on the present application and that both the present invention and the inventive concepts in the paper were at the time of the each respective invention and still currently under a commonly owned by the assignee International Business Machines.

Independent claim 1 as described above in the section entitled "(2-3) Rejection under 35 U.S.C. §102(e) Lui" have been amended to distinguish over Lui.

Further Lui reference taken alone and/or in view of Zhai simply does not suggest, teach or disclose the patentably distinct limitation of the elements in independent claim 1 of "recognizing a word pattern by processing the stroke using a combination of a plurality

of channels that selectively process different aspects of the stroke in relation to the plurality of the paths on the virtual keyboard."

For the foregoing reasons, independent claim 1 as amended distinguish over Lui taken alone and/or in view of Zhai. Claims 3, 8-10, 23, and 39 depend from claims 1, 21, and 37 respectively, since dependent claims contain all the limitations of the independent claims, claims 11-14 and 18 distinguish over Lui taken alone and/or in view of Zhai, as well, and the Examiner's rejection should be withdrawn.

(8) Rejection under 35 U.S.C. §103(a) Lui in view of Mileski

As noted above, the Examiner rejected claims 29-36 under 35 U.S.C. § 103(a) as being unpatentable over Lui et al. (US, 6,788,815) in view of Milewski et al. ("Medical Word Recognition Using a Computational Semantic Lexicon"). Independent claim 21 as described above in the section entitled "(2-3) Rejection under 35 U.S.C. §102(e) Lui" have been amended to distinguish over Lui.

Further Lui reference taken alone and/or in view of Milewski simply does <u>not</u> suggest, teach or disclose the patentably distinct limitation of the elements in independent claim 21 of "recognizing a word pattern by processing the stroke using a combination of a plurality of channels that selectively process different aspects of the stroke in relation to the plurality of the paths on the virtual keyboard."

For the foregoing reasons, independent claim 21 as amended distinguish over Lui taken alone and/or in view of Milewski. Claims 29-36 depend from claim 21, since dependent claims contain all the limitations of the independent claims, claims 29-36 distinguish over Lui taken alone and/or in view of Milewski, as well, and the Examiner's rejection should be withdrawn.

CONCLUSION

The prior art made of record and not relied upon was reviewed and Applicants believe that such prior art is not pertinent to Applicants' disclosure.

No amendment made was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim, unless Applicants have argued herein that such amendment was made to distinguish over a particular reference or combination of references.

Applicants acknowledge the continuing duty of candor and good faith to disclose information known to be material to the examination of this application. In accordance with 37 CFR §1.56, all such information is dutifully made of record. The foreseeable equivalents of any territory surrendered by amendment are limited to the territory taught by the information of record. No other territory afforded by the doctrine of equivalents is knowingly surrendered and everything else is unforseeable at the time of this amendment by the Applicants and their attorneys.

The Commissioner is hereby authorized to change any fees that may be required or credit any overpayment to Deposit Account 09-0441. In view of the preceding discussion, it is submitted that the claims are in condition for allowance. Reconsideration and re-examination is requested.

PLEASE CALL the undersigned if the Examiner believes that there are any informalities that can be corrected by Examiner's amendment, or that in any way it would help expedite the prosecution of the patent application.

Respectfully submitted.

Date: September 10, 2007　　　　　By: /Jon A. Gibbons/
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